Phase II EVR Balance System
Challenge Test Protocol
11/08/05

Test Conditions:

- Minimum 30-day test period
- Site located in southern California with relatively higher ambient temperatures when compared to the Sacramento region.
- Testing shall occur during the winter fuel season (uncontrolled RVP greater than 7.0 psi)
- Daily station shutdown of at least 9 hours
- Phase I EVR System and Phase II EVR hanging hardware installed
- Gasoline throughput greater than 150,000 gal/month
- Unusually high UST ullages for an extended period should be avoided
- Nozzles “locked out” with the use of pad locks during shut down period

Pre-Test Procedures:

a. Install data acquisition system (DAS) per TP-201.7: Continuous Pressure Monitoring
b. Conduct TP-201.3: Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities
c. Conduct TP-201.3C: Determination of Vapor Piping Connections to Underground Gasoline Storage Tanks (Tie-Tank Test)
d. Conduct TP-201.4: Dynamic Back Pressure
e. Conduct TP-201.6C: Compliance Determination of Liquid Removal Rate (87 grade only, high clip setting)
f. Collect and analyze samples of each grade of gasoline to determine RVP
g. Conduct bench testing of certified PV Valves in accordance with TP-201.1E prior to installation at each site
h. Conduct pressure transmitter accuracy check of the data acquisition system (minimum of 15 point check) with a NIST traceable secondary standard instrument
i. Verify integrity of nozzle vapor valve leak rate per TP-201.2B: Flow and Pressure Measurement of Vapor Recovery Equipment

Test Procedures:

a. Daily
   - Print product and ullage volumes from ATG system at opening shift and closing shift of the GDF
   - Lock out nozzles at closing and ensure nozzles are hung properly on the dispenser in the locked position.

b. Weekly
   - Collect and analyze samples of each grade of gasoline to determine RVP
   - Download data from data acquisition system (two times per week)
   - Evaluate pressure data, look for anomalies in the pressure profile or indicators which suggest a leaking system

c. Bi-Weekly
   - Conduct system integrity test per TP-201.3
   - Conduct liquid removal testing in accordance with TP-201.6C short version (drain hoses)

Post-Test Procedures:

a. Conduct TP-201.3: Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities
b. Conduct TP-201.4: Dynamic Back Pressure
c. Conduct TP-201.6C: Compliance Determination of Liquid Removal Rate (87 grade only, high clip setting)
d. Collect and analyze samples of each grade of gasoline to determine RVP
e. Download pressure data from the data logger
f. Conduct accuracy check of pressure transmitter of the data acquisition system (minimum of 15 point check) with a NIST traceable secondary standard instrument

Data Analysis:

1. Calculate the daily average ullage pressure, daily high pressure, and rolling 30-day average of each using section 4.6.3 through 4.6.5 of CP-201 “Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities”

Pass/Fail Criteria:

1. Successful pass of all tests
2. 30-day rolling average for the following (section 4.6 of CP-201)
   - daily average pressure $\leq$ +0.25 inches H_2O
   - daily high pressure $\leq$ +1.5 inches H_2O